

## HIGH-TEMPERATURE POWDER DEPOSITION APPARATUS AND METHOD UTILIZING FEEDBACK CONTROL

### ABSTRACT OF THE DISCLOSURE

A deposit is formed on a deposition substrate using a deposition gun that  
5 burns a mixture of a fuel and an oxidizer to form a deposition gas flow, mixes a  
powder into the deposition gas flow to form a deposition mixture flow, and  
projects the deposition mixture flow therefrom. The deposition gun is provided  
with a flowing coolant. A flow rate of the fuel to the deposition gun, a flow rate  
of the oxidizer to the deposition gun, a flow rate of the powder to the deposition  
10 gun, and a cooling capacity of the coolant flow are all measured. The flow rate  
of the fuel, the flow rate of the oxidizer, the flow rate of the powder, and the  
cooling capacity of the coolant flow are all controlled responsive to the step of  
measurements.